

AD-A100 447

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/0 4/2  
19305A MLRS, MISSILE NUMBER BN-004, BN-005, BN-006, ROUND NUMBER--ETC(U)  
APR 81 D C KELLER

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**METEOROLOGICAL DATA REPORT**

19305A MILS

Missile No. DM-500, DM-505, DR-506  
Round No. Y-137400-4, Y-137400-5, Y-137400-6  
24 April 1961

BY  
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**DTIC**  
DEPARTMENT OF DEFENSE  
INTELLIGENCE  
SIGNAL CORPS

ATMOSPHERIC SENSING INFORMATION  
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Meteorological data gathered for the launching of the 19305A MLRS, Missile No. BN-004, BN-005, BN-006, Round No. V-137/MD-4, V-138/MD-5, V-139/MD-6 presented in tabular form.		

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## INTRODUCTION

19305A MLRS, Missile Numbers BN-004, BN-006, Round Numbers V-137/MD-4, V-138/MD-5 and V-139/MD-6, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1211:38, 1211:42 and 1211:47 MDT, 28 April 1981. The scheduled launch times were 1200, 1200:03 and 1200:06 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( C ), relative humidity, dew point ( C ), density ( gm/m<sup>3</sup> ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at: LC33 and NICK Site to 2km

## SITE AND ALTITUDE

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

### SITE AND TIME

WSD 0900 MDT  
LC-37 1023 MDT  
WSD 1100 MDT  
\*LC-37 1237 MDT

\* No data due to ground equipment failure.

Assessment Form	
X	
Dist	
A	

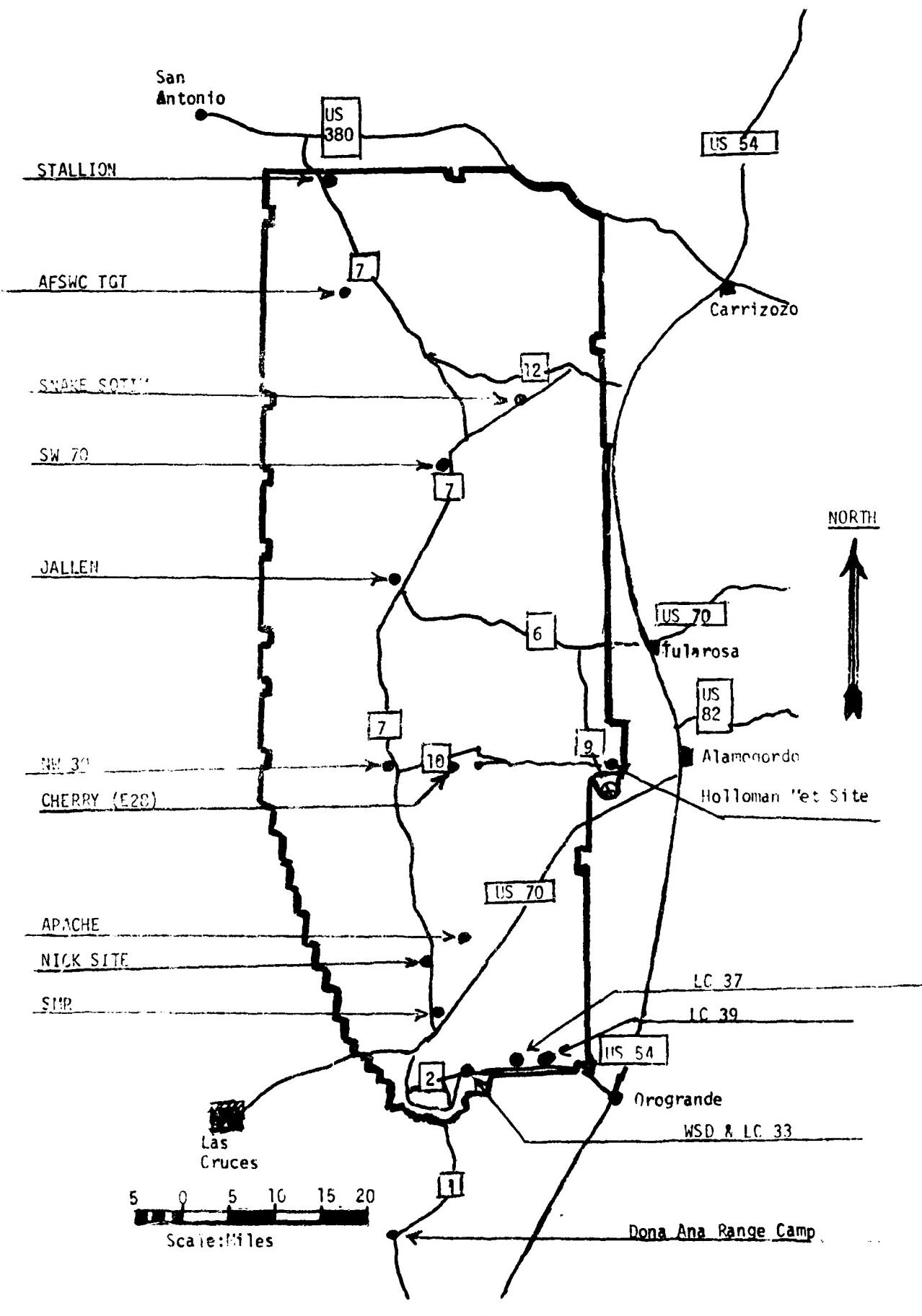


TABLE 1. Surface Observations taken at 1214 MDT,  
28 April 1981, at LC-33, 19305A MLRS,  
Missile No. BN-004, BN-005, BN-006,  
Round No. V-137/MD-4, V-138/MD-5, V-139/MD-6.

ELEVATION	3983	FT/MSL
PRESSURE	878.0	MBS
TEMPERATURE	28.2	°C
RELATIVE HUMIDITY	28	%
DEW POINT	7.9	°C
DENSITY	1008	GM/M <sup>3</sup>
WIND SPEED	05	KTS
WIND DIRECTION	360	DEGREES
CLOUD COVER	0/CU/8000	AMT/TYPE/HGT

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS28 April 1981  
1214 MDT

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.93			X485,877.29		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	017	06	T-30	017	03	T-30	020	06
T-20	011	05	T-20	022	04	T-20	011	05
T-10	013	05	T-10	013	04	T-10	013	05
T0.0	004	04	T0.0	008	03	T0.0	012	05
T+10	005	04	T+10	360	04	T+10	003	04

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIP DEG	SPEED KTS	T-TIME SEC	DIP DEG	SPEED KTS
T-30	023	06	T-30	096	03
T-20	360	05	T-20	100	02
T-10	001	05	T-10	100	02
T0.0	360	05	T0.0	100	02
T+10	355	06	T+10	100	02

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T30	MISG	MISG	T-30	157	03
T-20	"	"	T-20	176	02
T-10	"	"	T-10	166	02
T0.0	"	"	T0.0	166	03
T+10	"	"	T+10	153	04

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA  
 DATE 28 April 1981

SITE: LC-33  
 TIME: 1211 MDT  
 WSTM COORDINATES:  
 X= 486,037.24  
 Y= 182,350.16  
 H= 3977.30

SITE: NICK  
 TIME: 1211 MDT  
 WSTM COORDINATES:  
 X= 470,734.56  
 Y= 255,775.64  
 H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SUPFACE	360	05	SUPFACE	321	03
150	046	08	150	315	05
210	028	08	210	010	06
270	034	08	270	068	09
330	060	09	330	061	11
390	077	09	390	062	08
500	088	07	500	041	06
650	140	04	650	020	07
800	130	03	800	071	07
950	133	02	950	117	08
1150	154	03	1150	137	08
1350	141	06	1350	177	09
1550	199	03	1550	189	11
1750	177	02	1750	151	10
2000	116	09	2000	113	09

TABLE 5

**AIMING COMPUTER MET MESSAGES**  
28 April 1981

WSD 0900 MDT	LC-37 1023 MDT	WSD 1100 MDT
METCM1325065	METCM1325064	METCM1325065
281500122879	281640124877	281700124879
00284001 29360879	00000000 29870877	00142004 29970879
01328003 29330869	01287005 29650867	01236008 29830869
02476001 29270844	02563001 29360843	02628005 29500844
03354002 29130805	03496001 29010804	03627003 29070806
04198006 28750759	04355003 28590758	03243003 28720760
05217009 28360715	05226009 28280714	05233009 28400716
06167008 28000673	06197007 27970672	06184008 28030674
07151006 27520633	07175008 27510631	07163006 27560634
08340006 27080595	08332010 27040594	08346010 27110595
09368014 26760558	09353017 26740556	09362017 26810559
	10335017 26420521	10355018 26480524
	11354017 26040489	11353015 26110491
		12344023 25460445

STATION ALTITUDE 3,934.00' FEET  
DATE 31 AUGUST 1960.  
ACCELEROMETER

SIGNIFICANT LEVEL DATA  
1130020297  
WITNESS STATEMENT  
9900 HRS MDT  
TABLE 6

GEODETIC COORDINATES  
32°40'43" LAT DEG  
106°37'33" LONG DEG

POSITIONS OF OMETERS	POSITIONS OF EXPONENTIAL ALTITUDE	REL. DIAPOHIL PERCENT
MULTIPLES OF LEVELING	POSITIONS OF STATION	REL. DIAPOHIL PERCENT
478.9	3000.0	10.3
554.4	4773.5	6.7
350.0	4032.1	6.4
510.4	5274.2	3.9
700.0	10319.6	-2.9
537.2	10620.5	-4.8
615.0	13786.0	-9.0
590.0	14915.8	-5.4
272.9	15976.0	-4.2
555.2	16445.5	-6.2
538.8	17210.0	-6.7
510.6	19115.2	-11.6
100.0	24795.4	-26.0
362.6	26644.5	-32.3
535.4	29704.8	-35.8
360.6	31234.5	-40.9

WILHELM ALEXANDER

TABLE 7

STATION ALTITUDE 3,900.00 FEET MSL  
APR. 8, 1960  
PRECISION 140. ± 0.900 HRS ADT

WEATHER DATA  
WHITE SANDS  
TABLE 7 CON'T

GEODETIC COORDINATES  
32°40'04.3 LAT DEG  
106°37'03.2 LONG DEG

GEODETIC PRESSION	GEODETIC ALTITUDE	GEODETIC ALTITUDE	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX
REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX	REFRACTIVE INDEX
2.35000.0	410.5	-25.0	-50.4	20.4	512.4	616.2
2.40000.0	409.6	-24.4	-46.5	20.7	573.8	614.5
2.45000.0	408.6	-25.7	-41.5	20.9	565.3	612.8
2.50000.0	399.5	-27.1	-42.0	21.2	556.6	611.1
2.55000.0	384.0	-28.5	-45.7	21.4	547.9	609.4
2.60000.0	376.3	-29.8	-46.8	21.6	539.4	607.7
2.65000.0	368.9	-31.2	-45.9	21.6	531.1	605.0
2.70000.0	361.1	-32.4	-46.9	21.9	522.6	604.4
2.75000.0	353.4	-33.2	-47.6	21.7	513.0	603.5
2.80000.0	345.8	-33.9	-48.4	21.4	503.6	602.6
2.85000.0	338.4	-34.7	-49.2	21.1	494.3	601.9
2.90000.0	331.1	-35.7	-50.1	18.5**	485.7	600.3
2.95000.0	323.8	-36.9	-50.2	14.4**	477.4	598.9
3.00000.0	316.0	-38.0	-57.9	10.2**	469.3	597.4
3.05000.0	309.9	-39.2	-62.0	6.1**	461.4	595.9
3.10000.0	303.1	-40.4	-71.7	1.9**	453.6	594.4

\*\* AIR LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3900.00 FEET MSL  
29 APR. 01  
ASCENSIOIN 49.00 <  
9900 HRS MDT

MANDATORY LEVELS  
1100020297  
WHITE SANDS  
TABLE 8

GEODETIC COORDINATES  
32.40043 LAT UEG  
106.37033 LONG UEG

PRESSURE MILLIBARS	GEOPOTENTIAL FLUX	TEMPERATURE			REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
		AIR DEGREES	DEWPPOINT DEGREES	CENTIGRADE			
1050.0	43623.	18.5	6.4	45•	212•2	1•2	
1049.0	43631.	16.9	3.4	40•	150•7	1•7	
1048.0	43623.	12.7	-4	43•	115•9	5•7	
1030.0	10309.	6.3	-2.9	45•	114•3	9•6	
1230.0	12305.	3.6	-6.7	46•	69•9	6•8	
1041.0	10416.	-2.1	-13.4	42•	182•0	3•7	
1066.0	10666.	-6.4	-26.9	18•	209•0	14•2	
1900.0	19002.	-11.0	-30.6	16•	214•0	21•4	
2171.0	21711.	-18.1	-35.3	19•	217•7	22•4	
2655.0	26554.	-26.0	-41.7	21•	214•0	27•5	
2767.0	27673.	-33.5	-48.0	22•	223•4	27•9	
3117.0	31172.	-40.9					

\* \* ALL LAST D.E ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION L11101 49511  
8 APR. 61  
ASSEMBLY

SIGNIFICANT LEVEL DATA  
J11010005  
17-37

TABLE 9

MILLIBARS	REF. STATION AT TIME OF MEASUREMENT	TIME OF MEASUREMENT		RTL.HUM. PR.CELEST
		AT 11010005	AT 11010005	
677.4	665.4	24.6	7.5	34.0
686.6	690.6	22.7	6.3	35.0
690.0	695.0	20.5	6.1	39.0
698.4	688.6	18.1	5.3	43.0
700.0	694.0	16.5	4.6	37.0
726.4	9326.1	8.6	-2.7	42.0
700.0	10334.7	6.4	-9.4	46.0
546.4	12464.2	5.5	-10.9	34.9
536.4	1512.7	5.6	-21.2	24.0
578.2	15009.7	4.3	-21.8	24.0
561.0	16163.7	4.7	-25.3	18.0
520.0	16138.7	6.9	-29.4	17.0
512.6	16853.9	6.9	-30.0	17.0
560.6	19153.6	11.0	-31.2	17.0
457.0	21374.2	17.0	-35.0	18.0
454.0	21541.9	16.7	-35.3	18.0
470.0	24616.1	25.5	-41.6	20.0
457.2	27278.4	33.0	-40.2	20.0
264.0	29150.2	33.2	-43.2	20.0
534.6	26775.5	34.0	-49.5	20.0
322.0	29393.1	37.4		
316.1	36086.9	37.4		
360.0	31269.2	39.6		

at 0900 COORDINATES  
32°40'17" LAT E  
106°31'22" LONG W

STATION ALITUDE 46° 11' 37" FLET 155  
28 APR. 1961 1023 HRS MOT  
ASSEMBLED.

UNIVERSITY OF TORONTO LIBRARIES  
118018001

TABLE 1C

RELATIVE HUMIDITY	TEMPERATURE AIR, DEGREES CENTIGRADE	PERCENT WATER-CONTENT IN GALLONS PER SQ. FEET	RELATIVE HUMIDITY	TEMPERATURE AIR, DEGREES CENTIGRADE	PERCENT WATER-CONTENT IN GALLONS PER SQ. FEET	RELATIVE HUMIDITY	TEMPERATURE AIR, DEGREES CENTIGRADE	PERCENT WATER-CONTENT IN GALLONS PER SQ. FEET	RELATIVE HUMIDITY	TEMPERATURE AIR, DEGREES CENTIGRADE	PERCENT WATER-CONTENT IN GALLONS PER SQ. FEET
0.60	1.4	0.77	0.6	2.4	0.6	0.7	0.5	3.4	0.6	1.022	0.5
0.65	0.6	0.65	0.7	2.2	0.2	6.3	3.5	0.7	1.014	0.7	0.75
0.70	0.6	0.74	0.7	2.0	0.4	6.0	3.9	0.7	1.005	1.1	0.75
0.75	0.6	0.75	0.7	1.8	0.7	5.5	4.2	0.7	1.003	0.9	0.75
0.80	0.6	0.81	0.1	1.7	0.5	4.2	0.0	0.9	1.002	0.7	0.75
0.85	0.6	0.85	0.6	1.7	0.5	4.1	0.0	0.9	1.002	0.6	0.75
0.90	0.6	0.89	0.6	1.6	0.6	4.0	0.0	0.9	1.002	0.5	0.75
0.95	0.6	0.91	0.6	1.6	0.6	3.9	0.0	0.9	1.002	0.4	0.75
1.00	0.6	0.91	0.6	1.5	0.6	3.7	0.0	0.9	1.002	0.3	0.75
1.05	0.6	0.91	0.6	1.4	0.6	3.5	0.0	0.9	1.002	0.2	0.75
1.10	0.6	0.91	0.6	1.3	0.6	3.3	0.0	0.9	1.002	0.1	0.75
1.15	0.6	0.91	0.6	1.2	0.6	3.0	0.0	0.9	1.002	0.0	0.75
1.20	0.6	0.91	0.6	1.1	0.6	2.8	0.0	0.9	1.002	-0.1	0.75
1.25	0.6	0.91	0.6	1.0	0.6	2.6	0.0	0.9	1.002	-0.2	0.75
1.30	0.6	0.91	0.6	0.9	0.6	2.4	0.0	0.9	1.002	-0.3	0.75
1.35	0.6	0.91	0.6	0.8	0.6	2.2	0.0	0.9	1.002	-0.4	0.75
1.40	0.6	0.91	0.6	0.7	0.6	2.0	0.0	0.9	1.002	-0.5	0.75
1.45	0.6	0.91	0.6	0.6	0.6	1.9	0.0	0.9	1.002	-0.6	0.75
1.50	0.6	0.91	0.6	0.5	0.6	1.8	0.0	0.9	1.002	-0.7	0.75
1.55	0.6	0.91	0.6	0.4	0.6	1.7	0.0	0.9	1.002	-0.8	0.75
1.60	0.6	0.91	0.6	0.3	0.6	1.6	0.0	0.9	1.002	-0.9	0.75
1.65	0.6	0.91	0.6	0.2	0.6	1.5	0.0	0.9	1.002	-1.0	0.75
1.70	0.6	0.91	0.6	0.1	0.6	1.4	0.0	0.9	1.002	-1.1	0.75
1.75	0.6	0.91	0.6	0.0	0.6	1.3	0.0	0.9	1.002	-1.2	0.75
1.80	0.6	0.91	0.6	-0.1	0.6	1.2	0.0	0.9	1.002	-1.3	0.75
1.85	0.6	0.91	0.6	-0.2	0.6	1.1	0.0	0.9	1.002	-1.4	0.75
1.90	0.6	0.91	0.6	-0.3	0.6	1.0	0.0	0.9	1.002	-1.5	0.75
1.95	0.6	0.91	0.6	-0.4	0.6	0.9	0.0	0.9	1.002	-1.6	0.75
2.00	0.6	0.91	0.6	-0.5	0.6	0.8	0.0	0.9	1.002	-1.7	0.75
2.05	0.6	0.91	0.6	-0.6	0.6	0.7	0.0	0.9	1.002	-1.8	0.75
2.10	0.6	0.91	0.6	-0.7	0.6	0.6	0.0	0.9	1.002	-1.9	0.75
2.15	0.6	0.91	0.6	-0.8	0.6	0.5	0.0	0.9	1.002	-2.0	0.75
2.20	0.6	0.91	0.6	-0.9	0.6	0.4	0.0	0.9	1.002	-2.1	0.75
2.25	0.6	0.91	0.6	-1.0	0.6	0.3	0.0	0.9	1.002	-2.2	0.75
2.30	0.6	0.91	0.6	-1.1	0.6	0.2	0.0	0.9	1.002	-2.3	0.75
2.35	0.6	0.91	0.6	-1.2	0.6	0.1	0.0	0.9	1.002	-2.4	0.75
2.40	0.6	0.91	0.6	-1.3	0.6	0.0	0.0	0.9	1.002	-2.5	0.75
2.45	0.6	0.91	0.6	-1.4	0.6	-0.1	0.0	0.9	1.002	-2.6	0.75
2.50	0.6	0.91	0.6	-1.5	0.6	-0.2	0.0	0.9	1.002	-2.7	0.75
2.55	0.6	0.91	0.6	-1.6	0.6	-0.3	0.0	0.9	1.002	-2.8	0.75
2.60	0.6	0.91	0.6	-1.7	0.6	-0.4	0.0	0.9	1.002	-2.9	0.75
2.65	0.6	0.91	0.6	-1.8	0.6	-0.5	0.0	0.9	1.002	-3.0	0.75
2.70	0.6	0.91	0.6	-1.9	0.6	-0.6	0.0	0.9	1.002	-3.1	0.75
2.75	0.6	0.91	0.6	-2.0	0.6	-0.7	0.0	0.9	1.002	-3.2	0.75
2.80	0.6	0.91	0.6	-2.1	0.6	-0.8	0.0	0.9	1.002	-3.3	0.75
2.85	0.6	0.91	0.6	-2.2	0.6	-0.9	0.0	0.9	1.002	-3.4	0.75
2.90	0.6	0.91	0.6	-2.3	0.6	-1.0	0.0	0.9	1.002	-3.5	0.75
2.95	0.6	0.91	0.6	-2.4	0.6	-1.1	0.0	0.9	1.002	-3.6	0.75
3.00	0.6	0.91	0.6	-2.5	0.6	-1.2	0.0	0.9	1.002	-3.7	0.75
3.05	0.6	0.91	0.6	-2.6	0.6	-1.3	0.0	0.9	1.002	-3.8	0.75
3.10	0.6	0.91	0.6	-2.7	0.6	-1.4	0.0	0.9	1.002	-3.9	0.75
3.15	0.6	0.91	0.6	-2.8	0.6	-1.5	0.0	0.9	1.002	-4.0	0.75
3.20	0.6	0.91	0.6	-2.9	0.6	-1.6	0.0	0.9	1.002	-4.1	0.75
3.25	0.6	0.91	0.6	-3.0	0.6	-1.7	0.0	0.9	1.002	-4.2	0.75
3.30	0.6	0.91	0.6	-3.1	0.6	-1.8	0.0	0.9	1.002	-4.3	0.75
3.35	0.6	0.91	0.6	-3.2	0.6	-1.9	0.0	0.9	1.002	-4.4	0.75
3.40	0.6	0.91	0.6	-3.3	0.6	-2.0	0.0	0.9	1.002	-4.5	0.75
3.45	0.6	0.91	0.6	-3.4	0.6	-2.1	0.0	0.9	1.002	-4.6	0.75
3.50	0.6	0.91	0.6	-3.5	0.6	-2.2	0.0	0.9	1.002	-4.7	0.75
3.55	0.6	0.91	0.6	-3.6	0.6	-2.3	0.0	0.9	1.002	-4.8	0.75
3.60	0.6	0.91	0.6	-3.7	0.6	-2.4	0.0	0.9	1.002	-4.9	0.75
3.65	0.6	0.91	0.6	-3.8	0.6	-2.5	0.0	0.9	1.002	-5.0	0.75
3.70	0.6	0.91	0.6	-3.9	0.6	-2.6	0.0	0.9	1.002	-5.1	0.75
3.75	0.6	0.91	0.6	-4.0	0.6	-2.7	0.0	0.9	1.002	-5.2	0.75
3.80	0.6	0.91	0.6	-4.1	0.6	-2.8	0.0	0.9	1.002	-5.3	0.75
3.85	0.6	0.91	0.6	-4.2	0.6	-2.9	0.0	0.9	1.002	-5.4	0.75
3.90	0.6	0.91	0.6	-4.3	0.6	-3.0	0.0	0.9	1.002	-5.5	0.75
3.95	0.6	0.91	0.6	-4.4	0.6	-3.1	0.0	0.9	1.002	-5.6	0.75
4.00	0.6	0.91	0.6	-4.5	0.6	-3.2	0.0	0.9	1.002	-5.7	0.75
4.05	0.6	0.91	0.6	-4.6	0.6	-3.3	0.0	0.9	1.002	-5.8	0.75
4.10	0.6	0.91	0.6	-4.7	0.6	-3.4	0.0	0.9	1.002	-5.9	0.75
4.15	0.6	0.91	0.6	-4.8	0.6	-3.5	0.0	0.9	1.002	-6.0	0.75
4.20	0.6	0.91	0.6	-4.9	0.6	-3.6	0.0	0.9	1.002	-6.1	0.75
4.25	0.6	0.91	0.6	-5.0	0.6	-3.7	0.0	0.9	1.002	-6.2	0.75
4.30	0.6	0.91	0.6	-5.1	0.6	-3.8	0.0	0.9	1.002	-6.3	0.75
4.35	0.6	0.91	0.6	-5.2	0.6	-3.9	0.0	0.9	1.002	-6.4	0.75
4.40	0.6	0.91	0.6	-5.3	0.6	-4.0	0.0	0.9	1.002	-6.5	0.75
4.45	0.6	0.91	0.6	-5.4	0.6	-4.1	0.0	0.9	1.002	-6.6	0.75
4.50	0.6	0.91	0.6	-5.5	0.6	-4.2	0.0	0.9	1.002	-6.7	0.75
4.55	0.6	0.91	0.6	-5.6	0.6	-4.3	0.0	0.9	1.002	-6.8	0.75
4.60	0.6	0.91	0.6	-5.7	0.6	-4.4	0.0	0.9	1.002	-6.9	0.75
4.65	0.6	0.91	0.6	-5.8	0.6	-4.5	0.0	0.9	1.002	-7.0	0.75
4.70	0.6	0.91	0.6	-5.9	0.6	-4.6	0.0	0.9	1.002	-7.1	0.75
4.75	0.6	0.91	0.6	-6.0	0.6	-4.7	0.0	0.9	1.002	-7.2	0.75
4.80	0.6	0.91	0.6	-6.1	0.6	-4.8	0.0	0.9	1.002	-7.3	0.75
4.85	0.6	0.91	0.6	-6.2	0.6	-4.9	0.0	0.9	1.002	-7.4	0.75
4.90	0.6	0.91	0.6	-6.3	0.6	-5.0	0.0	0.9	1.002	-7.5	0.75
4.95	0.6	0.91	0.6	-6.4	0.6	-5.1	0.0	0.9	1.002	-7.6	0.75
5.00	0.6	0.91	0.6	-6.5	0.6	-5.2	0.0	0.9	1.002	-7.7	0.75
5.05	0.6	0.91	0.6	-6.6	0.6	-5.3	0.0	0.9	1.002	-7.8	0.75
5.10	0.6	0.91	0.6	-6.7	0.6	-5.4	0.0	0.9	1.002	-7.9	0.75
5.15	0.6	0.91	0.6	-6.8	0.6	-5.5	0.0	0.9	1.002	-8.0	0.75
5.20	0.6	0.91	0.6	-6.9	0.6	-5.6	0.0	0.9	1.002	-8.1	0.75
5.25	0.6	0.91	0.6	-7.0	0.6	-5.7	0.0	0.9	1.002	-8.2	0.75
5.30	0.6	0.91	0.6	-7.1	0.6	-5.8	0.0	0.9	1.002	-8.3	0.75
5.35	0.6	0.91	0.6	-7.2	0.6	-5.9	0.0	0.9	1.002	-8.4	0.75
5.40	0.6	0.91	0.6	-7.3	0.6	-6.0	0.0	0.9	1.002	-8.5	0.75
5.45	0.6	0.91	0.6	-7.4	0.6	-6.1	0.0	0.9	1.002	-8.6	0.75
5.50	0.6	0.91	0.6	-7.5	0.6	-6.2	0.0	0.9	1.002	-8.7	0.75
5.55	0.6	0.91	0.6	-7.6	0.6	-6.3	0.0	0.9	1.002	-8.8	0.75
5.60	0.6	0.91	0.6	-7.7	0.6	-6.4	0.0	0.9	1.002	-8.9	0.75
5.65	0.6	0.91	0.6	-7.8	0.6	-6.5	0.0	0.9	1.002	-9.0	0.75
5.70	0.6	0.91	0.6	-7.9	0.6	-6.6	0.0	0.9	1.002	-9.1	0.75
5.75	0.6	0.91	0.6	-8.0	0.6	-6.7	0.0	0.9	1.002	-9.2	0.75
5.80	0.6	0.91	0.6	-8.1	0.6	-6.8	0.0	0.9	1.002	-9.3	0.75
5.85	0.6	0.91	0.6	-8.2	0.6	-6.9	0.0	0.9	1.002	-9.4	0.75
5.90	0.6	0.91	0.6	-8.3	0.6	-7.0	0.0	0.9	1.002	-9.5	0.75
5.95	0.6	0.91	0.6	-8.4	0.6	-7.1	0.0	0.9	1.002	-9.6	0.75
6.00	0.6	0.91	0.6	-8.5	0.6	-7.2	0.0	0.9	1.002	-9.7	0.75
6.05	0.6	0.91	0.6	-8.6	0.6	-7.3	0.0	0.9	1.002	-9.8	0.75
6.10	0.6	0.91	0.6	-8.7	0.6	-7.4	0.0	0.9	1.002	-9.9	0.75

STATION ALTITUDE 451.37 FEET  
SUN ALT. 61  
ASCELESTRIUM, INC. 1023 HRS MET

UPPER AIR DATA  
1160130000  
LC-37

TABLE 10 CONT

REF ID	TIME	DEGREES	DEGREES	DEGREES	DEGREES	PERCENT	DIR/CURV	SOUND	SPED OF	WIND DATA	WIND DATA	WIND DATA
ALTIMETER		ALTD	WEIGHT	WEIGHT	WEIGHT	PERCENT	%TFR	KNOTS	DIRECTION	SWFT	SWFT	SWFT
240000.0	419.3	-23.7	-49.5	19.1	573.0	615.3	207.6	26.9	1.000129			
245000.0	401.9	-25.2	-43.5	19.9	564.6	613.5	600.7	28.1	1.000127			
250000.0	390.6	-26.6	-42.7	20.0	556.0	611.3	206.3	29.1	1.000125			
255000.0	380.3	-28.0	-43.9	20.0	547.4	610.0	204.0	32.0	1.000123			
260000.0	371.2	-29.4	-45.1	20.9	539.0	608.3	202.0	36.0	1.000121			
265000.0	369.0	-30.6	-46.3	20.0	530.7	606.5	205.5	34.3	1.000119			
270000.0	361.5	-32.2	-47.5	20.3	524.6	604.7	205.5	31.6	1.000117			
275000.0	352.6	-33.1	-49.2	20.9	513.3	603.7	212.6	26.7	1.000115			
280000.0	345.2	-33.2	-49.3	20.0	502.6	603.5	221.6	24.2	1.000112			
285000.0	338.8	-34.6	-49.0	20.0	493.5	602.5	225.5	29.9	1.000110			
290000.0	331.5	-35.4	-49.9	14.6**	485.7	600.8	226.9	35.5	1.000108			
295000.0	324.4	-37.1	-51.7	2.4**	678.0	596.6	226.1	41.0	1.000107			
300000.0	317.3	-37.4	-51.6	0.9*	468.9	598.2	468.3	1.000104				
305000.0	316.4	-38.2	-51.6	0.2	597.1	452.2	595.6	1.000103				
310000.0	305.6	-39.5	-51.6	0.5					1.000101			

\*\* AT LAST, ORIGIN RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

TRANSITION ALTITUDE 10000 FT MSL  
 08 APR. 1973 031023 HRS MDT  
 ASCENSION ISL.

Mandatory Levels  
 1160160050  
 16-37  
 TABLE 11

DECODING COORDINATES  
 32°40'17.5" LAT LEG  
 106°31'23.2" LONG LEG

REFRESHMENT DISTANCE	REFRESHMENT TIME	REFRESHMENT	RLL PHTK.	RLL PHTK.	STAN DATA
POSITIONS	TIME	AIR TEMPERATURE DEGREES C	WIND DIRECTION PERCENT	WIND DIRECTION DEGREES (TN)	SPEED KNOTS
150.0	0000Z	20.5	60	34	5
160.0	0000Z	16.2	100	37	9
170.0	0000Z	11.8	100	40	0.0
170.0	1632Z	9.1	90	20	120.7
180.0	1231Z	3.5	100	34	101.2
190.0	1447Z	-2.0	100	18	7.6
190.0	1651Z	-5.0	2644	10	176.7
190.0	1919Z	-11.0	312	17	190.9
200.0	2172Z	-17.5	358	16	195.5
200.0	2452Z	-25.5	418	20	17.7
200.0	2760Z	-33.1	483	20	209.2
200.0	3120Z	-39.8			217.0

STATION NUMBER 1000 HRS. 1000 HRS. 1000 HRS.

TABLE 12  
SILVER CACO-64 IN VITRO UPTAKE

GEODEDIC COORDINATES

12

RELATION	PERCENT	EXPLANATION	PERCENT	EXPLANATION	PERCENT
1.00000	56.0	6.9	56.0	36.0	36.0
.99999	5.5	21.0	5.5	45.6	45.6
.99998	4.1	1.0	4.1	38.0	38.0
.99997	1.0	-1.0	1.0	41.0	41.0
.99996	-1.0	11.0	-1.0	-9.6	-9.6
.99995	0.4	0.4	0.4	25.0	25.0
.99994	-3.2	-3.2	-3.2	-20.4	-20.4
.99993	-5.0	-5.0	-5.0	-26.6	-26.6
.99992	-10.9	-10.9	-10.9	-31.1	-31.1
.99991	-18.0	-18.0	-18.0	-36.0	-36.0
.99990	-26.1	-26.1	-26.1	-42.6	-42.6
.99989	-34.1	-34.1	-34.1	-46.3	-46.3
.99988	-35.5	-35.5	-35.5	-50.1	-50.1
.99987	-38.2	-38.2	-38.2	-40.7	-40.7
.99986	-39.7	-39.7	-39.7	-41.3	-41.3
.99985	-40.0	-40.0	-40.0	-41.7	-41.7

CHICAGO METROPOLITAN AREA  
AT 1100 HRS MDT  
PRES. 29.9200 FT SL

TABLE 13  
WEATHER DATA  
113000Z SEPTEMBER  
WHITE SATELLITES

GEOLYTIC COORDINATES  
32°40'04.5 LAT N  
106°37'33.3 LONG E

SATELLITE ALTITUDE IN MI	PRESENT ALTITUDE IN MI	TEMPERATURE AT POINT OF CONSIDERATION	RELATIVE HUMIDITY PERCENT	DENSITY METERS	SPEED OF SOUND KNOTS	DIRECTION OF WIND DEGREES	WIND DATA KNOTS	LAT. X OF REFLECTION
3900.0	3790.0	29.0	70.0	1022.0	674.3	69.0	4.1	1.000276
4000.0	3790.7	29.0	69.3	1021.8	674.3	79.8	4.1	1.000276
4100.0	3790.4	29.0	7.1	1011.3	671.9	63.0	3.3	1.000263
4200.0	3790.5	21.0	5.5	1000.7	669.5	51.4	2.7	1.000263
4300.0	3790.5	19.3	6.1	988.6	667.6	27.9	2.4	1.000259
4400.0	3790.9	17.7	6.6	977.1	665.7	3.0.5	2.6	1.000256
4500.0	3790.5	16.0	4.6	965.6	665.7	540.3	3.1	1.000252
4600.0	3790.2	15.4	1.9	956.7	662.9	537.5	2.2	1.000244
4700.0	3790.1	14.5	0.0	937.0	661.8	29.3	1.4	1.000238
4800.0	3790.1	13.4	-2	923.9	669.4	129.1	2.1	1.000234
4900.0	3790.5	12.2	-9	911.0	659.1	136.0	4.6	1.000230
5000.0	3790.9	11.1	-1.0	901.5	657.8	135.5	6.6	1.000225
5100.0	3791.7	10.5	-4.4	898.4	656.9	132.8	8.3	1.000218
5200.0	3790.6	9.8	-7.4	876.7	656.0	124.0	8.7	1.000211
5300.0	3790.7	9.0	-10.0	857.8	654.8	116.7	9.0	1.000205
5400.0	3790.7	7.6	-17.2	846.0	653.2	110.7	8.7	1.000201
5500.0	3790.2	6.2	-12.3	834.5	651.6	104.9	8.3	1.000197
5600.0	3790.6	5.5	-4.3	823.1	649.9	99.5	7.6	1.000194
5700.0	3790.5	4.8	-13.5	811.9	648.3	96.2	6.8	1.000191
5800.0	3790.5	5.4	-16.7	800.6	646.6	96.2	5.9	1.000187
5900.0	3790.3	2.1	-15.9	789.9	645.9	119.0	4.6	1.000184
6000.0	3791.0	.7	-17.0	779.2	643.5	101.0	5.1	1.000181
6100.0	3791.2	-7	-16.2	763.7	641.7	106.9	8.9	1.000178
6200.0	3790.1	-7	-14.4	757.9	640.2	201.1	11.9	1.000175
6300.0	3790.3	2.1	-20.7	746.6	639.3	199.8	15.2	1.000171
6400.0	3790.2	-4.1	-22.6	733.5	638.4	199.7	17.7	1.000168
6500.0	3790.2	-9.8	-24.6	721.3	637.5	201.0	16.3	1.000164
6600.0	3790.5	-9.5	-26.6	710.1	636.2	203.5	18.1	1.000162
6700.0	3790.6	-9.6	-27.5	701.0	635.0	205.0	17.3	1.000159
6800.0	3790.5	-5.5	-20.7	692.0	634.2	199.9	16.9	1.000156
6900.0	3790.7	-4.1	-22.6	683.1	633.8	202.0	16.9	1.000156
7000.0	3790.4	-9.6	-24.6	677.5	632.0	197.8	16.6	1.000154
7100.0	3790.7	-10.6	-26.6	666.6	631.3	195.9	17.1	1.000151
7200.0	3790.9	-10.6	-27.5	658.6	629.0	194.4	17.7	1.000149
7300.0	3791.1	-7.6	-20.7	649.0	628.2	195.9	16.6	1.000146
7400.0	3790.9	-7.3	-22.6	641.1	628.2	197.4	19.4	1.000144
7500.0	3790.5	-12.0	-24.6	633.5	626.0	196.9	19.4	1.000142
7600.0	3790.5	-12.0	-26.6	625.0	625.0	200.0	20.1	1.000139
7700.0	3790.7	-10.6	-27.5	618.7	623.4	201.0	21.1	1.000137
7800.0	3790.7	-13.2	-20.7	609.5	621.7	201.0	22.1	1.000135
7900.0	3790.5	-13.2	-22.6	600.5	620.0	201.0	23.1	1.000133
8000.0	3790.4	-21.0	-24.6	591.6	618.2	201.0	24.2	

STATION EIGHT HOURS AND FORTY-FIVE  
MINUTES. 1130 HRS MM

TABLE 13 (CONT'D)

THE LIGHT ILLUMINATION WHICH WAS USED IN THE PRACTICE OF THE RELATIVE HUMIDITY TESTS WAS THAT WHICH EXISTED AT THE TIME OF THE MEASUREMENT.

1100 NRS EDT  
1100 NRS EDT  
1100 NRS EDT

TABLE 14  
DETAILED LLWLS  
1100 NRS EDT

on 09/11/65 CDDA 1000  
52° 40' N 100° 00' E  
100.37182 100.006

DETAILED LLWLS	TIME	AT LOW TIDE	AT HIGH TIDE	PERIOD	LLWS	LLWS	LLWS
DETAILED LLWLS	TIME	AT LOW TIDE	AT HIGH TIDE	PERIOD	LLWS	LLWS	LLWS
0500.0	0500.	21.	6.5	30.	53.0	53.0	53.0
0900.0	0900.	15.0	3.0	40.	54.0	54.0	54.0
0900.0	0900.	12.0	3.0	40.	13.0	13.0	13.0
0900.0	0900.	9.0	3.0	40.	11.0	11.0	11.0
0900.0	0900.	4.0	2.0	20.	9.0	9.0	9.0
0900.0	0900.	-1.0	-1.0	20.	7.0	7.0	7.0
1400.0	1400.	-1.0	-1.0	20.	16.0	16.0	16.0
1600.0	1600.	-6.0	-27.0	17.	20.0	20.0	20.0
1600.0	1600.	-10.0	-31.0	17.	19.0	19.0	19.0
1600.0	1600.	-17.0	-36.0	18.	20.0	20.0	20.0
1600.0	1600.	-26.0	-42.0	19.	20.0	20.0	20.0
1600.0	1600.	-34.0	-48.0	22.	20.0	20.0	20.0
3100.0	3100.	-34.0	-40.0	22.	30.0	30.0	30.0